GERONTOLOGY INSTITUTE

The Impact of Closing Public Chronic Disease Hospitals in Massachusetts: A Cost Analysis

UNIVERSITY OF MASSACHUSETTS AT BOSTON

The Impact of Closing Public Chronic Disease Hospitals in Massachusetts: A Cost Analysis

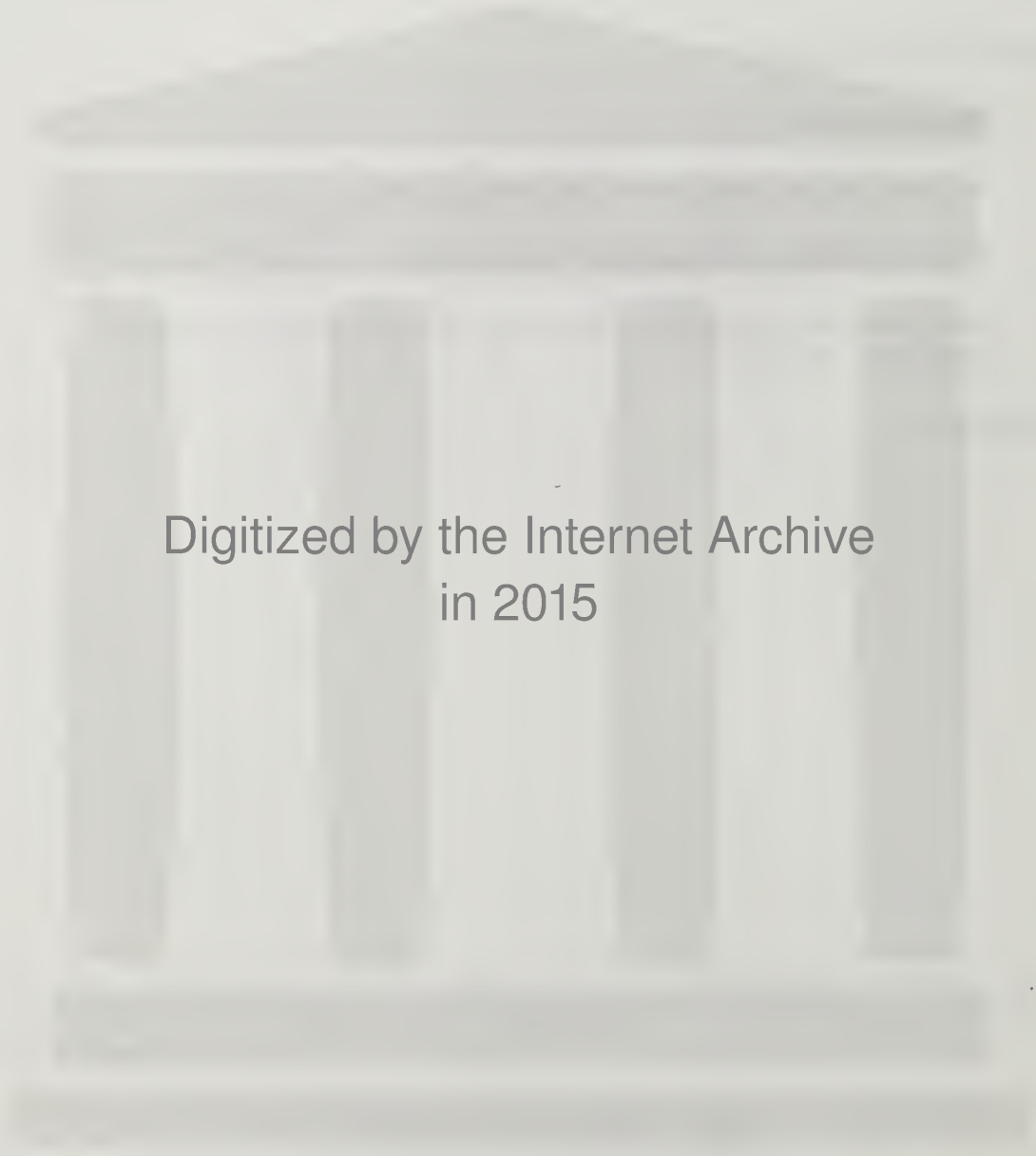
Kiran Verma, Ph.D.

September 1994

Gerontology Institute
University of Massachusetts Boston
100 Morrissey Boulevard
Boston, MA 02125-3393
(617) 287-7300

Publications, Gerontology Institute
University of Massachusetts Boston
100 Morrissey Blvd.
Boston, MA 02125-3393
or call (617) 287-7300.

Table of Contents



The Impact of Closing Public Chronic Disease Hospitals in Massachusetts: A Cost Analysis

Executive Summary

In a June 1991 report issued by the Governor's Special Commission on the Consolidation of Heath and Human Services Institutional Facilities, the commission recommended that three of seven Massachusetts public chronic disease hospitals, Lakeville, Rutland Heights, and Cushing, be closed down. According to the cost analysis presented in the report, closure of these underutilized facilities was expected to save the state about $16 million in annual operating costs. In addition, the state was expected to save $90 million from avoidance of capital expenditures to keep the facilities in compliance with state codes and accreditation standards. The Rutland Heights and Cushing Hospitals were closed in November 1991 and Lakeville Hospital was closed in February 1992. Prior to closure, all the patients were transferred to appropriate alternative health care facilities. The plan was to transfer most patients to nursing homes where they could obtain high quality care appropriate for their needs. The expectation was that a small proportion of patients with more extensive health care requirements would be transferred to other chronic disease hospitals.

This report is one of a series that examines the closing of the public chronic disease hospitals and the results. Other reports are concerned with the policy environment that led to the closings, the implementation process, the perceptions of patients regarding the relocation experience, the views of family representatives about the relocation process and its results, the impact on patient health as reflected by clinical records, and the effects on patient survival.

In this report we present a post audit of the cost savings actually achieved from the closure of the three facilities. Based on our analysis detailed in the full report, we have reached the following conclusions:

In 1993, actual savings from operations were approximately $11 million rather than the $16 million annual savings projected in the original proposal. The main difference is due to fewer cost savings for Lakeville hospital. In 1993 cost savings from closing Lakeville were $2 million rather than the $6.7 million projected in the original report. One of the main reasons for the discrepancy between the original projections and actual realized savings appears to be due to overlooking of certain continuing expenses such as retirement compensation and health care benefits for the early retirees, and ongoing costs to maintain the closed facilities. While in the long term these costs will decrease, the impact in the short term is considerable and should have been included in the original proposal. In addition, we were told by the staff at the Department of Public Health (DPH) that more savings would have been realized had the State not honored the expressed desire of certain patients to stay together as groups rather than be scattered in nursing homes all over the state. To place patients in groups was also thought to be more clinically beneficial for them. The outcome of this process was the placement of nearly all Lakeville patients in a single private chronic rehabilitation hospital, Mediplex, New Bedford, which was more expensive than the options included in the original proposal.

For Cushing Hospital and Rutland Heights Hospital, actual savings more closely approximated projected savings. For these facilities, the state appears to have been able to avoid net capital expenditures of $85 million which is quite close to the original estimate of $90 million. However, as discussed in the full report, actual capital avoidance figures could not be independently audited and hence rely heavily on the estimates given in the original report.

The Impact of Closing Public Chronic Disease Hospitals in Massachusetts: A Cost Analysis

Background

In June 1991, a report of the Governor's Special Commission on Consolidation of Health and Human Services Institutional Facilities was issued. This report detailed a plan for the consolidation of state institutions and the provision of appropriate alternative care services. The report covered facilities operated by three departments: Mental Health, Mental Retardation, and Public Health. In this report the members of the special commission believed that the State of Massachusetts had too many individual health care institutions with too many beds. Based on this the commission recommended that the system needed to be downsized. A further rationale for the downsizing was based on an estimate of sizable savings from the following factors:

1. The number of costly heating plants would be greatly reduced while those that remain in use would be state-of- the art and less expensive to maintain.

2. Right sizing would put an end to the heating of empty buildings , the mowing of unused lawns, and the general upkeep of huge campuses which serve a fraction of their original capacities.

3. Scores of services which are duplicated at many campuses, such as pharmacies, laundry, food service, maintenance, and grounds keeping, would be pared down to a few key locations.

4. Capital costs would be greatly reduced, with the state running a small number of strategically placed, high quality schools and hospitals.

Based on a detailed analysis of existing state facilities, the Governor's Special Commission decided to recommend closure of three of DPH's seven chronic disease hospitals. The facilities closed were Cushing, Lakeville, and Rutland Heights. In the months just prior to the announcement of the closures, the long-term patients in the three facilities numbered 388 (Cushing, 236; Lakeville, 82; and Rutland Heights, 70). The plan was to transfer most patients to nursing homes where they could obtain high quality care appropriate for their needs. The expectation was that a small proportion of patients with more extensive health care requirements would be transferred to other chronic disease hospitals.

This report is one of a series that examines the impact of the closing of the public chronic disease hospitals. The University of Massachusetts Boston was asked to evaluate the effects of the overall facility consolidation initiative. The Gerontology Institute agreed to conduct comprehensive evaluation research on the effects of the closing of the public chronic disease hospitals. Other Gerontology Institute reports on the closing of the three hospitals are concerned with the policy environment that led to the closings, the implementation process, the perceptions of patients regarding the relocation experience, the views of family representatives about the relocation process and its results, the impact on patient health as reflected by clinical records, and the effects on patient survival. The focus in this report on the cost savings achieved by the Commonwealth adds the financial perspective that complements the other reports that are concerned with the effects of relocation on patient well-being.

Taking into consideration the projected costs of placing existing patients in the three hospitals in appropriate alternative facilities, it was originally estimated that the state would save $16.2 million annually in operations, and $89.8 million by not having to make projected capital expenditures on the three closed facilities. Details of these projected savings are outlined below.

Projected Annual Operating Savings by Facility

Facility/Hospital	Fiscal Year 1990 Cost	Less Alternative Placement Cost	Anticipated Savings
Cushing	$11.90 million	$8.06 million	$3.73 million
Lakeville	$ 9.35 million	$2.62 million	$6.73 million
Rutland Heights	$ 8.50 million	$2.76 million	$5.76 million

Anticipated Savings from Projected Capital Requirements

Facility/Hospital	Savings from Projected Capital Requirements
Cushing	$42.00 million
Lakeville	$ 2.82 million
Rutland Heights	$45.00 million

This cost analysis in this report focuses on our post audit of the cost savings actually achieved by closing the three hospitals. Primarily, the post audit focuses on two issues:

1. The actual realization of the cost savings identified in the original proposal and,
2. The appropriateness of the cost savings identified in the original proposal.

Actual Realization of the Cost Savings

To analyze the actual cost savings from closing the hospitals, we compared the actual payments made by the state for the alternative care of their former patients, with estimated cost of operations had the hospitals not been closed.

We used inflation-adjusted costs of operations for a full fiscal year before the closings to estimate what the costs might have been had the hospitals not been closed. The costs of operating each of the hospitals were obtained from the RSC 403 filed by the hospitals. We used a method

recommended by the DPH accounting staff to compute the annual cost of operations.

We were able to obtain information about the actual payments made by the state for patients who had been transferred from the Lakeville facility. This was because most of the patients from Lakeville went to non-nursing home facilities and the DPH was able to furnish us with the exact figures for these patients. However, this information was not available for the other two closed facilities because a large number of their patients went to nursing homes; it was not possible extract state payments for just the Cushing and Rutland Heights patients from the master data files of all state-supported patients in the nursing homes. Therefore, for these two hospitals we estimated the state payments for the relocated patients by tracing the Management Minutes Questionnaire (MMQ) scores of each of the patients to the facility specific per diem rate associated with them. From this we could estimate the yearly expense incurred by the state for the care of each of these patients in the various facilities to which they were relocated.

Since we did not have access to source documents for the cost data in the original proposal, we were unable to evaluate the accuracy of projected savings from capital avoidance. Therefore, in this analysis we used the projected savings as presented in the original proposal and adjusted them for additional one-time expenditures that had been previously overlooked.

Finally, because of the data difficulties outlined above, we believe that our cost/benefit analysis for Lakeville Hospital is more complete than the analyses for Cushing and Rutland Heights Hospitals.

Post-Closing Cost/Benefit Analysis

Lakeville Hospital

This analysis compares the projected costs had the state continued to operate Lakeville Hospital to the actual costs incurred by the state after having closed it.

The following are two sets of analyses to determine the net operating annual savings actually realized by the state. The first analysis was provided to us by the DPH in February 1993. The second analysis adjusts the DPH figures for some items that we felt were missing from their analysis. We present these two analyses side by side for a more meaningful comparison.

Computation of projected total hospital costs (Based on 1990 RSC-403):

		DPH	Adjusted
1.	Total Hospital Expense (Sch. IX, Col. 12, L100)	$15,571,630	$15,571,630
	Less Depreciation		(196,313)
	Less Interest Long Term		(64,071)
	Subtotal		$15,311,246
2.	Backout "Other Inpatient"	(600,093)	(600,093)
3.	Backout "Routine Clinic"	(188,569)	(188,569)
	Subtotal	$14,782,968	$14,522,584
4.	Fringe adjusted to actual cost (29% vs 25%) (Applied to only S&W cost of $8,209,156 of clinical & other inputs)	328,366	328,366
5.	Worker's Compensation Adjustment, 3% applied to S&W costs	268,605	268,605
6.	Two-year inflation per medical[1]	1,230,395	1,209,564
7.	Anticipated Annual Capital Requirements above current (Based on Rehab. Hospital Standard of 4.94% to total expenses-Monitrend)	637,188	637,188
8.	**Subtotal costs**	17,247,522	16,966,307
9.	Net State Revenue[2]	$9,349,200	$10,097,136
10.	Net State Cost if the facility had not been closed (items #8 - #9)	7,898,322	6,869,171
	Current Net State Costs for Relocated Patients		
11.	Net state costs for alternative settings:		
	Fully state funded	$536,915	$536,915
	Skilled Nursing level, Chronic level and community placements	479,744	479,744
	Mediplex Parkwood Facility Placements	2,846,804	2,846,804
	Net State Costs for alternative settings	$3,863,463	$3,863,463
	Long-Term Cost Savings before accounting for ongoing costs related to the closed facilities (Items #9 - #11)	**$4,034,859**	**$3,005,708**
12.	Ongoing costs for the closed facility:		
	Utilities		164,180
	Grounds and Security		35,500
	Compensation for early retirees[3]		507,600
	Health care benefits[4]		338,400
	Subtotal		1,045,680
13.	Total actual current costs (Items #11 - #12)	$3,863,463	$4,909,143
	Current Actual Annual State Savings[5] (Items #10 - #13)	**$4,034,859**	**$1,960,028**

Analysis of the Capital Avoidance Costs

The original projected savings in the one-time capital avoidance costs of $2.85 million should be compared with the one-time unemployment compensation of $444,469 (102 employees for an average of 18.73 weeks at an average compensation of $232.65 per week). Further, because we could not obtain information about the current status of the unemployed former employees at this hospital, this analysis has ignored costs associated with some employees who might have continued to be unemployed and were eligible for some other kind of state assistance.

Rutland Hospital

Computation of Projected Total Hospital Costs (Based on 1989 RSC-403):

1.	Total Hospital Expense computed according to the schedule shown Lakeville Hospital adjusted for three-year inflation per medical CPI (12%)	$15.34 million
2.	Net State Revenue adjusted for three-year inflation (12%)	$ 5.69 million
3.	Net State Cost if the facility had not been closed (Items #1 - #3)	$ 9.65 million
	Current Net State Costs for Relocated Patients	
4.	Net State Costs for alternative placements:	
	Cost for Nursing Home placement[6]	$ 0.95 million
	Cost for other DPH hospitals[7]	$ 1.49 million
	Net State Costs for alternative placements	$ 2.44 million
5.	Long-term Cost Savings before accounting for ongoing costs related to the closed facilities	$ 7.21 million
6.	Ongoing Costs related to the closed facility	
	Utilities	$ 0.02 million
	Grounds and Security	$ 0.16 million
	Compensation for early retirees[8]	$ 0.31 million
	Health care benefits for early retirees[9]	$ 0.21 million
	Subtotal of ongoing costs	$ 0.70 million
7.	Total Actual Current Annual Costs (Items #4 + #6)	$ 3.14 million
8.	**Current Actual Annual State Savings**	**$ 6.51 million**

Analysis of the Capital Avoidance Costs

The original projected savings of $45 million from capital avoidance costs should be compared with the one-time unemployment compensation of $0.32 million (73 employees for an average of 18.73 weeks at an average compensation of $232.65 per week). Further, because we could not obtain information about the current status of the unemployed employees, this analysis has ignored costs associated with some employees who might have continued to be unemployed and might have been eligible for some other kind of state assistance.

Cushing Hospital

Computation of Projected Total Hospital Costs (Based on 1991 RSC-403):

1.	Total Hospital Expense computed according to the schedule shown for Lakeville Hospital adjusted for one year inflation per medical CPI (4%)	$21.94 million
2.	Net State Revenue adjusted for one year inflation (4%)	$11.12 million
3.	Net State Cost if the facility had not been closed (Items #1 - #3)	$10.82 million
	Current Net State Costs for Relocated Patients	
4.	Net State Cost for alternative placements:	
	Nursing Homes[10]	$ 2.94 million
	Other health care facilities[11]	$ 4.95 million
	Net State Costs for alternative placements	$ 7.19 million
5.	**Cost Savings before accounting for ongoing costs related to the closed facilities**	$ 3.63 million
6.	Ongoing costs related to the closed facility:	
	Utilities, Grounds and Security[12]	$ 0.00 million
	Compensation for early retirees[13]	$ 0.64 million
	Health care benefits for early retirees[14]	$ 0.42 million
	Subtotal ongoing costs	$ 1.06 million
7.	Total actual current annual costs (Items #4 + #6)	$ 8.25 million
8.	**Total Actual Annual State Savings (Item #3 - #6)**	**$ 2.57 million**

Analysis of the Capital Avoidance Costs

The original projected savings of $42 million from capital avoidance should be compared with the one-time unemployment compensation of $0.85 million (194 employees for an average of 18.73 weeks at an average compensation of $232.65 per week). Further, because we could not obtain information about the current status of the unemployed former employees, this analysis has ignored costs associated with some employees who might have continued to be unemployed and might have been eligible for some other kind of state assistance.

The Appropriateness of Cost Savings Identified in the Original Proposal

The projected cost savings from the closing of the hospitals was partially realized. In the case of Lakeville Hospital savings were achieved but they fell well below the amount projected. In the case of Cushing Hospital and Rutland Heights Hospital, actual savings more closely approximated projected savings.

Lakeville Hospital

As can be seen from the above cost/benefit analysis, the actual cost savings from the closure of Lakeville Hospital appear to be $2 million instead of $6.7 million projected in the original report. While we were not able to obtain detailed information as to how the special commission had computed the projected savings, based on the subsequent February 1993 cost analysis provided to us by the DPH, we can offer the following reasons for this $4.7 million discrepancy.

1. The original report overestimated the hospital operating costs by including sunk costs such as depreciation, and nondifferential costs such as interest on outstanding long-term debt. While the practice of including depreciation costs in the analysis was in accordance with the published "Guidelines for Implementing the Commonwealth Privatization Law",[15] in our opinion, neither this nor the interest on long term debt is relevant for the cost/benefit analysis because neither is impacted by the decision to close the facility. In our analysis we excluded these costs from the computation of the net operating cost of the facility.

2. The original report had noted that savings would be obtained by not heating empty buildings or spending on the general upkeep of the underutilized facilities. In reality, the state still continues to pay these expenses because the unoccupied buildings need some minimal level of care and maintenance. These expenses will continue until these facilities have been leased or disposed of. These expenses had not been included in the original proposal.

In a subsequent conversation we have been told that the state is currently in the process of considering a major proposal for redevelopment of the Lakeville campus. Once this takes place, the above mentioned expenses related to facility upkeep will disappear. In addition, the Cushing facility has been demolished, ending the need for ongoing facility upkeep and security on that Campus.

3. The original proposal had overlooked additional post-closure expenses the state has to incur because of the retirement compensation and health care benefits it has to provide for the early retirees. Just as many corporations in the U.S. have found to their great dismay, a small number

of retirees - for example, only 47 from Lakeville - can cause a fairly substantial expenditure (estimated at $850,000) per year till they reach 65 years of age.

4. In a conversation with the staff at DPH we were told that the savings for Lakeville would have been greater if the patients had been moved to the nursing homes suggested in the original proposal. However, in response to the expressed desire of the patients and their families to keep the patients together, the state decided to move groups of patients to certain facilities rather than scattering them in nursing homes all over the state. To place patients in groups was also thought to be more clinically beneficial for them. The outcome of this process was Mediplex which was more expensive than the original options that had been considered.

5. Finally, while computing the $2.85 million one time savings from capital avoidance, the original report overlooked potential expenditures related to unemployment compensation for former employees who might be eligible for such benefits. Once again due to a lack of actual compensation data, we used averages provided by the DPH to estimate unemployment expenditures of approximately $450,000. While these expenditures are expected to be short term, we would like to note that the state could be incurring such costs over a longer term if some of the former employees qualify for additional benefits such as welfare. On the other hand, some of the employees could also find employment in the private sector and therefore get off the government payroll.

Rutland Heights Hospital

The state's projected annual cost savings of $5.76 million was very close to our estimate of

the actual cost savings of $6.51 million. It appears that the state was actually able to negotiate lower payments for the relocated patients. The achieved savings, however, would have been greater if the state had been able to dispose of the closed facility and therefore not continue to incur utility and maintenance costs. In addition, based on the original projections, the state has apparently saved about $44.7 million in capital avoidance costs.

Cushing Hospital

Our estimate of actual annual cost savings of $2.6 million is about $1.1 million less than the original projection of $3.73 million. Similar to the reasons discussed for Lakeville Hospital, the main differences appear to be due to overestimation of the projected operating costs for the hospital and exclusion of costs related to early retirees. Additionally, based on the projected requirements for capital improvements, the state is estimated to have saved approximately $41 million in capital avoidance costs.

ENDNOTES

1. It is not clear that it is appropriate to use the general purpose medical Consumer Price Index (CPI) to adjust costs for the hospitals. This is because the published indices are driven by increases in costs due to advances in expensive technical medical procedures, whereas the largest component of Lakeville Hospital costs is employee compensation. In addition, the DPH analysis adjusted only the cost but not the revenue figures for inflation. We corrected for this lopsided treatment by adjusting as well the revenues figures in item #9.

2. Adjusted for 8% inflation rate.

3. (47 retirees × $900 × 12 months) The $900/month is an estimate for the average retirement compensation for a state employee.

4. (47 retirees × $600 × 12 months) The $900/month is an estimate for the average retirement compensation for a state employee.

5. This number would have been $1,729,818 if an inflation rate of 4% instead of 8% had been assumed.

6. This estimate is based on per diem rates associated with the MMQ scores for each of the patients. Of the original 41 patients who were transferred from Rutland Heights Hospital, we were able to find complete data for 33 patients. Seven patients were known to be dead and for one patient we did not find any information. We used average per diem rates for these dead or missing patients with the assumption that the state has probably admitted some other patients in their stead because the number of people who qualify for Medicaid and need nursing home care is most likely to be fairly constant in the short run.

7. Since we were not able to get specific information about 17 patients, who had been sent to facilities other than nursing homes, we assumed that the projected cost figures for these patients in the original report were correct and adjusted them for inflation to estimate the state payments for these patients. We also assumed that the state had discharged 13 patients from Rutland as had been projected in the original report.

8. (29 retirees × $900 × 12 months)

9. (29 retirees × $600 × 12 months)

10. This estimate is based on per diem rates associated with the MMQ scores for each of the patients. Of the original 174 patients who were transferred to private nursing homes from Cushing Hospital, we were able to find complete data for 105 patients. Of these 58 patients were know to be dead and 11 were either in non-nursing home facilities or had missing records. We used average per diem rates for the dead or

missing information patients with the assumption that the state has probably admitted some other patients in their stead because number of people who qualify for Medicaid and need nursing home care is most likely to be fairly constant in the short run.

11. Since we were not able to get specific information about 62 patients who had been sent to facilities other than nursing homes, we used the projected cost from the original report and adjusted it for inflation to estimate this number.

12. We have been told that the facilities related to Cushing Hospital were disposed of in Fall '93.

13. (59 retirees × $900 × 12 months)

14. (59 retirees × $600 × 12 months)

15. Office of the State Auditor, March 1994.

GERONTOLOGY INSTITUTE

The University of Massachusetts Boston

Established in 1984, the Gerontology Institute at the University of Massachusetts Boston has as its mission:

1) To focus attention on the economic, social, and political issues and problems confronting the aging population; and 2) To strengthen the ability of older people to make productive contributions in aging services and public policy development.

The Institute furthers the University commitment to the study and development of social policy on aging. Policy research and education is conducted on issues affecting older people and their families, and the Institute serves as an intellectual center for policy-relevant issues in aging. In addition, it assists national, state, and local organizations in analyzing policy issues and formulating policy options on matters concerning the elderly. Core funding is provided by the Massachusetts Legislature. Major projects are funded through grants and contracts.

Programs of the Institute are carried out through the Frank J. Manning Research Division and the Public Policy Division. The three major priority areas for both divisions are: 1) productive aging, that is, opportunities for older people to play useful social roles; 2) long-term care for the elderly; and 3) economic security. The Institute pays particular attention to the special needs of racial and ethnic minority elderly.

The University offers an interdisciplinary Ph.D. program in Gerontology with an emphasis in social policy. It is one of two such programs in the United States. The Gerontology Center in the College of Public and Community Service is a teaching resource for the Ph.D. program along with the Gerontology Institute. In addition, the Institute provides doctoral students with experience in research and policy analysis.

The Institute supports the University's Gerontology Certificate programs as well. A one-year program of concentrated study, the Frank J. Manning Certificate Program in Gerontology prepares older learners for roles in aging services. Most students are over 60 years of age. Through an advanced Gerontological Social Policy Certificate program selected graduates of the Manning program participate in applied research projects within the Institute. The regular involvement of older people helps to assure that Institute projects reflect the concerns of older people.

The Institute also publishes a scholarly peer-reviewed quarterly with an international perspective, the Journal of Aging & Social Policy.

Since its formation, the Institute has been directed by Scott A. Bass, Ph.D. It has a diverse, multigenerational, multicultural permanent faculty and staff of approximately 16 people.